

Electromagnetic Vibration Test of a Ground Coil Using a REBCO Magnet

Katsutoshi MIZUNO Minoru TANAKA Masafumi OGATA

In the electromagnetic vibration test, a ground coil is excited under the strong magnetic field of a superconducting magnet. Since the vibration mechanism is same as that in the actual running condition of the maglev, the electromagnetic vibration test is one of the important durability tests of the ground coils. Until now, the electromagnetic vibration tests have been used a low temperature superconducting magnet. However, a global shortage of helium has been reported, and the importance of the high temperature superconducting magnet has been increasing. We carried out the electromagnetic vibration test with a superconducting magnet with REBCO wire, which is one of high temperature materials. In this paper, we also propose a novel monitoring and protection method for the REBCO magnet.